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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,678	05/08/2001	Douglas Charles Elliott	23-56420	3245

7590

07/01/2003

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EXAMINER

PRICE, ELVIS O

ART UNIT

PAPER NUMBER

1621

DATE MAILED: 07/01/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n N .

09/851,678

Applicant(s)

ELLIOTT, DOUGLAS CHARLES

Examiner

Elvis O. Price

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-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-18,27-31 and 39-45 is/are allowed.
- 6) ☒ Claim(s) 1-9,11,19-26 and 32-38 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 . 6) ☐ Other:

### **DETAILED ACTION**

Claims 1-45 are pending in the application.

#### ***Information Disclosure Statement***

The information disclosure statement, filed 2/5/03, complies with the provisions of 37 CFR 1.97, 1.98 and MPEP02 § 609. It has been placed in the application file, and the information referred to therein has been considered as to the merits.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 11, 19-26, and 32-38 rejected under 35 U.S.C. 103(a) as being unpatentable over Rothrock {US Pat. 2,004,135}.

Applicants claim, in brief, a method for producing at least one polyol from lactose comprising: (a) hydrolyzing lactose to produce a hydrolyzate that includes at least one monosaccharide; (b) subsequently hydrogenating the hydrolyzate to produce and alditol-containing intermediate composition; and (c) hydrogenolyzing the alditol-containing intermediate composition to produce at least one polyol.

Rothrock teaches a method for producing at least one polyol (ethylene glycol, propylene glycol or glycerol from a monosaccharide comprising, hydrogenating the monosaccharide to produce and alditol-containing intermediate composition followed by hydrogenolyzing the alditol containing intermediate composition to produce at least one

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polyol (see Col. 1, lines 27-47 and Examples 1-8). The difference between the presently claimed invention and what is taught by the Rothrock reference is that the Rothrock reference does not exemplify the presently claimed first step of hydrolyzing lactose to produce a hydrolyzate that includes at least one monosaccharide. However, the Rothrock reference generally teaches that the monosaccharide used in his invention may be obtained from the hydrolysis of polysaccharides including lactose (Col. 3, lines 25-40).

It would have been *prima facie* obvious to one having ordinary skill in the art, in view of the Rothrock reference, to arrive at the presently claimed because Rothrock teaches a method for producing at least one polyol from a monosaccharide (which may be obtained from the hydrolysis of a polysaccharide such as lactose) comprising, hydrogenating the monosaccharide to produce an alditol-containing intermediate composition followed by hydrogenolyzing the alditol containing intermediate composition to produce at least one polyol.

One having ordinary skill in the art would have been motivated, in view of the teachings in the Rothrock reference, to arrive at other alternative routes for preparing polyols (depending on cost and availability of the materials) by using a polysaccharide, such as lactose, as the raw material in generating the monosaccharide which is subsequently processed to produce the desired product. Therefore, the presently claimed invention would have been obvious to one having ordinary skill in the art.

***Allowable Subject Matter***

Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not teach or suggest performing the presently claimed method steps (of claim 1) in the presence of the catalyst system(s) recited in claim 10.

The following is a statement of reasons for the indication of allowable subject matter: Claims 12-18, 27-31 and 39-45 are unobvious over the prior art of record because the prior art of record does not teach or suggest using a ruthenium hydrogenation catalyst which is disposed on a titania support in step (b) of the presently claimed method or heating lactose in the presence of water and an enzyme.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elvis O. Price whose telephone number is 703 605-1204. The examiner can normally be reached on 8:30 am to 5:00 pm; Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 703 308-4532. The fax phone numbers for the organization where this application or proceeding is assigned is 703 308-4556 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-1235.

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A handwritten signature in black ink, appearing to read "Elvis O. Price". The signature is stylized with a large, looped "E" and a cursive "Price".

Elvis O. Price

June 27, 2003